

## ABSTRACT

A system and method for enhancing the integrity of a system which uses a high performance, low assurance, general purpose microprocessor to execute an avionics software application and uses a high assurance, low performance microprocessor to monitor the output of the general purpose microprocessor, without the need for comparison of outputs from parallel processors executing functionally equivalent versions of the avionics software application. The monitoring microprocessor is used to analyze state transitions of the first microprocessor and to analyze the computed values output by said general purpose microprocessor, against predetermined limitations based upon aircraft limitations.